

What is Claimed is:

1 1. An acetabular component and an insertion and extraction tool for use with
2 the acetabular component, comprising

3 an acetabular component comprising a partial spherical body having a peripheral
4 surface circumscribing a cavity, a plurality of recesses along an outer surface of said
5 body each having an entry portion along said peripheral surface leading into an
6 engagement portion angled from said entry portion, each of said engagement portions
7 having a first end aligned with said entry portion and a second end extending beyond
8 said entry portion to define a shoulder between said second end and said peripheral
9 surface; and

10 an insertion and extraction tool comprising an outer sleeve having a distal end
11 carrying a locking member including a plurality of radially extending arms and a locking
12 finger extending distally from each of said arms, an inner shaft, slidably disposed in said
13 outer sleeve and having a distal end carrying an engagement plate disposed distally of
14 said distal end of said outer sleeve and having a plurality of engagement protrusions,
15 each of said engagement protrusions including a leg extending distally from said
16 engagement plate to a foot angled from said leg, said engagement plate having a
17 plurality of channels therein slidably receiving said arms, respectively, and a spring
18 biasing said outer sleeve and said shaft longitudinally to a locked position for said tool in
19 which said locking member is in an extended position relative to said engagement plate
20 wherein said locking fingers protrude distally beyond said engagement plate alongside
21 said legs of said engagement protrusions, said tool being movable to an unlocked
22 position in response to an actuating force applied to said tool to effect relative
23 longitudinal movement of said outer sleeve and said shaft to move said locking member
24 to a retracted position relative to said engagement plate wherein said locking fingers are
25 retracted within said channels, said feet being insertable through said entry portions into
26 said first ends of said engagement portions of said recesses with said tool in said

27 unlocked position and being movable into said second ends of said engagement
28 portions in response to rotation of said engagement plate about its central longitudinal
29 axis, said shoulders preventing withdrawal of said engagement protrusions from said
30 recesses in a longitudinal direction and said recesses presenting portions unoccupied
31 by said engagement protrusions when said feet are moved into said second ends of
32 said engagement portions, said tool being returned automatically to said locked position
33 by said spring in response to removal of the actuating force to cause said locking
34 fingers to enter said unoccupied portions and prevent rotation of said engagement plate
35 about its central longitudinal axis whereby said acetabular component is locked to said
36 tool.

1 2. An acetabular component and an insertion and extraction tool as recited in
2 claim 1 and further comprising an alignment member disposed on said engagement
3 plate for insertion in said cavity of said acetabular component to facilitate alignment of
4 said feet with said entry portions of said recesses.

1 3. A method of locking an acetabular component to an insertion and
2 extraction tool, comprising the steps of
3 providing an insertion and extraction tool in a locked position wherein locking
4 protrusions of the tool are extended to be disposed alongside engagement protrusions
5 of the tool;

6 applying an actuating force to a proximal end of the tool to move the tool to an
7 unlocked position wherein the locking protrusions are retracted away from the
8 engagement protrusions;

9 moving the tool in a longitudinal direction toward an acetabular component to
10 insert the engagement protrusions into recesses of the acetabular component;
11 rotating the tool about its central longitudinal axis to present a portion of each

12 recess unoccupied by the corresponding engagement protrusion; and
13 releasing the actuating force from the tool to automatically return the tool to the
14 locked position such that the locking protrusions enter the unoccupied portions of the
15 recesses and lock the acetabular component to the tool.

1 4. An acetabular component for releasable engagement with locking
2 structure of an insertion and extraction tool, comprising
3 a thin-walled, partial spherical body having a peripheral end surface, an
4 inner surface circumscribed by said peripheral end surface and defining an articular
5 surface for a femoral head, an outer surface, and a plurality of angled recesses along
6 said outer surface, said recesses having entry portions along said peripheral end
7 surface for the locking structure of the insertion and extraction tool.

1 5. An acetabular component for releasable engagement with locking
2 structure of an insertion and extraction tool as recited in claim 4 wherein said body has
3 a thickness of about 3-6 mm.